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BUREAU OF AIR REGULATION

June 10, 2003

Ms. Trina Vielhauer
Florida Department of Environmental Protection
Bureau of Air Regulation
Mail Station #5505
2600 Blair Stone Road
Tallahassee, Florida 32399

Dear Ms. Vielhauer:

Re: Progress Energy Florida University of Florida Cogeneration Facility
Title V Permit Application

Enclosed is an application for air permit requesting revisions to the carbon monoxide (CO) limits for the combustion turbine at the University of Florida Cogeneration Facility. During phone conversations with Mr. Bruce Mitchell, of your staff, he stated that there is a possibility of operating the unit 8760 hours per year while complying with all applicable permitted conditions for the unit. However, the permitted CO emission limits do not reflect this operating scenario. Specific to operating the unit on natural gas, the application retains the CO emissions cap while correcting the CO emissions rate limits according to the maximum hours of operation. Specific to operating the unit on No. 2 fuel oil, the application retains the permitted CO emissions cap and rate limits. However, an annual hour operating limit is requested for No. 2 fuel oil operations.

Please contact me at (727) 826-4152 if you have any questions.

Sincerely,

A handwritten signature in black ink, appearing to read 'Matt Lydon', with a long horizontal flourish extending to the right.

Matt Lydon
Environmental Specialist

Enclosure

cc: Mr. Bruce Mitchell – FL DEP – ARM Tallahassee Office
Mr. Chris Kirts – FL DEP – ARM Northeast District Office



Department of Environmental Protection

Division of Air Resources Management

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APPLICATION FOR AIR PERMIT - TITLE V SOURCE

See Instructions for Form No. 62-210.900(1)

BUREAU OF AIR REGULATION

I. APPLICATION INFORMATION

Identification of Facility

1. Facility Owner/Company Name: Progress Energy Florida	
2. Site Name: University of Florida Cogeneration Plant	
3. Facility Identification Number: 0010001 [] Unknown	
4. Facility Location: Street Address or Other Locator: Mowry Road, Building 82, University of Florida City: Gainesville County: Alachua Zip Code: 32611-2295	
5. Relocatable Facility? [] Yes [X] No	6. Existing Permitted Facility? [X] Yes [] No

Application Contact

1. Name and Title of Application Contact: Matt Lydon, Environmental Specialist	
2. Application Contact Mailing Address: Organization/Firm: Florida Power Street Address: 100 Central Avenue, Mail Code: BB1A City: St. Petersburg State: FL Zip Code: 33701	
3. Application Contact Telephone Numbers: Telephone: (727) 826-4152 Fax: (727) 826-4216	

Application Processing Information (DEP Use)

1. Date of Receipt of Application:	
2. Permit Number:	0010001-006-AC
3. PSD Number (if applicable):	
4. Siting Number (if applicable):	

Purpose of Application

Air Operation Permit Application

This Application for Air Permit is submitted to obtain: (Check one)

- Initial Title V air operation permit for an existing facility which is classified as a Title V source.
- Initial Title V air operation permit for a facility which, upon start up of one or more newly constructed or modified emissions units addressed in this application, would become classified as a Title V source.

Current construction permit number: _____

- Title V air operation permit revision to address one or more newly constructed or modified emissions units addressed in this application.

Current construction permit number: 0010001-004-AC

Operation permit number to be revised: _____

- Title V air operation permit revision or administrative correction to address one or more proposed new or modified emissions units and to be processed concurrently with the air construction permit application. (Also check Air Construction Permit Application below.)

Operation permit number to be revised/corrected: _____

- Title V air operation permit revision for reasons other than construction or modification of an emissions unit. Give reason for the revision; e.g., to comply with a new applicable requirement or to request approval of an "Early Reductions" proposal.

Operation permit number to be revised: _____

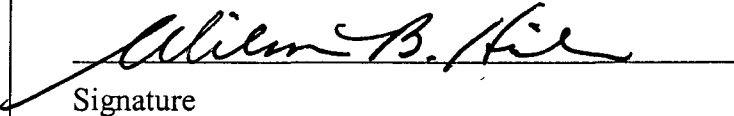
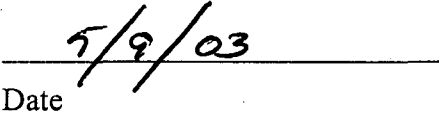
Reason for revision: _____

Air Construction Permit Application

This Application for Air Permit is submitted to obtain: (Check one)

- Air construction permit to construct or modify one or more emissions units.
- Air construction permit to make federally enforceable an assumed restriction on the potential emissions of one or more existing, permitted emissions units.
- Air construction permit for one or more existing, but unpermitted, emissions units.

Owner/Authorized Representative or Responsible Official

1. Name and Title of Owner/Authorized Representative or Responsible Official: Wilson B. Hicks, Jr. , Plant Manager
2. Owner/Authorized Representative or Responsible Official Mailing Address: Organization/Firm: Florida Power Street Address: 100 Central Avenue, Mail Code: GV44 City: Gainesville State: FL Zip Code: 33701
3. Owner/Authorized Representative or Responsible Official Telephone Numbers: Telephone: (352) 337-6904 Fax: (352) 337-6920
4. Owner/Authorized Representative or Responsible Official Statement: <i>I, the undersigned, am the owner or authorized representative*(check here [], if so) or the responsible official (check here [✓], if so) of the Title V source addressed in this application, whichever is applicable. I hereby certify, based on information and belief formed after reasonable inquiry, that the statements made in this application are true, accurate and complete and that, to the best of my knowledge, any estimates of emissions reported in this application are based upon reasonable techniques for calculating emissions. The air pollutant emissions units and air pollution control equipment described in this application will be operated and maintained so as to comply with all applicable standards for control of air pollutant emissions found in the statutes of the State of Florida and rules of the Department of Environmental Protection and revisions thereof. I understand that a permit, if granted by the Department, cannot be transferred without authorization from the Department, and I will promptly notify the Department upon sale or legal transfer of any permitted emissions unit.</i>  Signature  Date

* Attach letter of authorization if not currently on file.

Professional Engineer Certification

1. Professional Engineer Name: Scott Osbourn Registration Number: 57557
2. Professional Engineer Mailing Address: Organization/Firm: ENSR International Street Address: 150 Second Ave. N., Suite 700 City: St. Petersburg State: FL Zip Code: 33701-3343
3. Professional Engineer Telephone Numbers: Telephone: (727) 898-9591 Fax: (727) 898-9582

4. Professional Engineer Statement:

I, the undersigned, hereby certify, except as particularly noted herein, that:*

(1) To the best of my knowledge, there is reasonable assurance that the air pollutant emissions unit(s) and the air pollution control equipment described in this Application for Air Permit, when properly operated and maintained, will comply with all applicable standards for control of air pollutant emissions found in the Florida Statutes and rules of the Department of Environmental Protection; and

(2) To the best of my knowledge, any emission estimates reported or relied on in this application are true, accurate, and complete and are either based upon reasonable techniques available for calculating emissions or, for emission estimates of hazardous air pollutants not regulated for an emissions unit addressed in this application, based solely upon the materials, information and calculations submitted with this application.

If the purpose of this application is to obtain a Title V source air operation permit (check here [], if so), I further certify that each emissions unit described in this Application for Air Permit, when properly operated and maintained, will comply with the applicable requirements identified in this application to which the unit is subject, except those emissions units for which a compliance schedule is submitted with this application.

If the purpose of this application is to obtain an air construction permit for one or more proposed new or modified emissions units (check here [], if so), I further certify that the engineering features of each such emissions unit described in this application have been designed or examined by me or individuals under my direct supervision and found to be in conformity with sound engineering principles applicable to the control of emissions of the air pollutants characterized in this application.

If the purpose of this application is to obtain an initial air operation permit or operation permit revision for one or more newly constructed or modified emissions units (check here [], if so), I further certify that, with the exception of any changes detailed as part of this application, each such emissions unit has been constructed or modified in substantial accordance with the information given in the corresponding application for air construction permit and with all provisions contained in such permit.

[Signature]

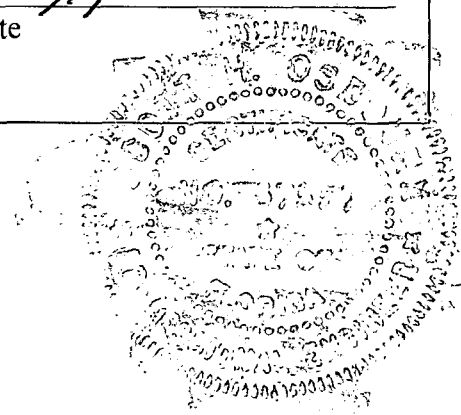
Signature

6/10/03

Date

(seal)

* Attach any exception to certification statement.



Scope of Application

Emissions Unit ID	Description of Emissions Unit	Permit Type	Processing Fee
001	COGEN PLANT GAS TURBINE		\$0.00

Application Processing Fee

Check one: Attached - Amount: \$ _____ Not Applicable

Construction/Modification Information

1. Description of Proposed Project or Alterations:

2. Projected or Actual Date of Commencement of Construction: May 18, 2001

3. Projected Date of Completion of Construction: June 2, 2001

Application Comment

This application is in request to:

- 1) express the CT's maximum hours of operation on No. 2 fuel oil as 219 hours while retaining the current limits CO of 75.0 ppmvd, 70.5 lbs/hr, and 7.7 tpy.
- 2) revise the CT's CO limits while burning natural gas to reflect the CT's potential maximum 8760 hours of operation per year, 8541 hours on natural gas and 219 hours on No. 2 fuel oil.

This application specifically identifies the CT's CO emissions and does not address any other unit or regulated pollutant.

II. FACILITY INFORMATION

A. GENERAL FACILITY INFORMATION

Facility Location and Type

1. Facility UTM Coordinates: Zone: 17 East (km): 369.4 North (km): 3279.3			
2. Facility Latitude/Longitude: Latitude (DD/MM/SS): 29° 38' 23" Longitude (DD/MM/SS): 82° 20' 55"			
3. Governmental Facility Code: 0	4. Facility Status Code: A	5. Facility Major Group SIC Code: 49	6. Facility SIC(s):
7. Facility Comment (limit to 500 characters): UF Cogeneration plant consists of a single combustion turbine (CT), heat recovery steam Generator (HRSG), duct burners (DB) located between the CT and the HRSG, and two backup boilers.			

Facility Contact

1. Name and Title of Facility Contact: Wilson B. Hicks, Jr. , Plant Manager			
2. Facility Contact Mailing Address: Organization/Firm: Florida Power Street Address: Mowry Road, Building 82, University of Florida City: Gainesville State: FL Zip Code: 32611-2295			
3. Facility Contact Telephone Numbers: Telephone: (352) 337-6904 Fax: (352) 337-6920			

Facility Regulatory Classifications

Check all that apply:

1. <input type="checkbox"/> Small Business Stationary Source?	<input type="checkbox"/> Unknown
2. <input checked="" type="checkbox"/> Major Source of Pollutants Other than Hazardous Air Pollutants (HAPs)?	
3. <input type="checkbox"/> Synthetic Minor Source of Pollutants Other than HAPs?	
4. <input type="checkbox"/> Major Source of Hazardous Air Pollutants (HAPs)?	
5. <input type="checkbox"/> Synthetic Minor Source of HAPs?	
6. <input checked="" type="checkbox"/> One or More Emissions Units Subject to NSPS?	
7. <input type="checkbox"/> One or More Emission Units Subject to NESHAP?	
8. <input type="checkbox"/> Title V Source by EPA Designation?	
9. Facility Regulatory Classifications Comment (limit to 200 characters): CT – NSPS (40 CFR 60 Subpart GG) DBs – NSPS (40 CFR 60 Subpart Db)	

List of Applicable Regulations

Chapter 62-4	Permits
Rule 62-204.220	Ambient Air Quality Protection
Rule 62-204.240	Ambient Air Quality Standards
Rule 62-204.800	Federal Regulations Adopted by Reference
Rule 62-210.300	Permits Required
Rule 62-210.350	Public Notice and Comments
Rule 62-210.370	Reports
Rule 62-210.550	Stack Height Policy
Rule 62-210.650	Circumvention
Rule 62-210.700	Excess Emissions
Rule 62-210.900	Forms and Instructions
Rule 62-212.300	General Preconstruction Review Requirements
Rule 62-213	Operation Permits for Major Sources of Air Pollution
Rule 62-214	Federal Acid Rain Program
Rule 62-296	General Pollutant Emission Limiting Standards
Rule 62-297.310	General Test Requirements
Rule 62-297.401	Compliance Test Methods
Rule 62-297.520	EPA Continuous Monitor Performance Specifications
40 CFR 60	Applicable sections of Subpart A, General Requirements, NSPS Subparts GG and Db
40 CFR 70	Title V Operating Permits
40 CFR 72	Acid Rain Permits
40 CFR 75	Monitoring
40 CFR 77	Acid Rain Program – Excess Emissions

B. FACILITY POLLUTANTS

List of Pollutants Emitted

1. Pollutant Emitted	2. Pollutant Classif.	3. Requested Emissions Cap		4. Basis for Emissions Cap	5. Pollutant Comment
		lb/hour	tons/year		
CO	A	*29.9 ** 70.5	135.2	ESCPSD	Includes 001 * Natural Gas Use ** Fuel Oil Use

C. FACILITY SUPPLEMENTAL INFORMATION

Supplemental Requirements

1. Area Map Showing Facility Location: <input type="checkbox"/> Attached, Document ID: _____ <input checked="" type="checkbox"/> Not Applicable <input type="checkbox"/> Waiver Requested
2. Facility Plot Plan: <input type="checkbox"/> Attached, Document ID: _____ <input checked="" type="checkbox"/> Not Applicable <input type="checkbox"/> Waiver Requested
3. Process Flow Diagram(s): <input type="checkbox"/> Attached, Document ID: _____ <input checked="" type="checkbox"/> Not Applicable <input type="checkbox"/> Waiver Requested
4. Precautions to Prevent Emissions of Unconfined Particulate Matter: <input type="checkbox"/> Attached, Document ID: _____ <input checked="" type="checkbox"/> Not Applicable <input type="checkbox"/> Waiver Requested
5. Fugitive Emissions Identification: <input type="checkbox"/> Attached, Document ID: _____ <input checked="" type="checkbox"/> Not Applicable <input type="checkbox"/> Waiver Requested
6. Supplemental Information for Construction Permit Application: <input type="checkbox"/> Attached, Document ID: _____ <input checked="" type="checkbox"/> Not Applicable
7. Supplemental Requirements Comment:

Additional Supplemental Requirements for Title V Air Operation Permit Applications

8. List of Proposed Insignificant Activities: <input type="checkbox"/> Attached, Document ID: _____ <input checked="" type="checkbox"/> Not Applicable (List of Insignificant Activities has not changed from initial Title V application)
9. List of Equipment/Activities Regulated under Title VI: <input type="checkbox"/> Attached, Document ID: _____ <input type="checkbox"/> Equipment/Activities On site but Not Required to be Individually Listed <input checked="" type="checkbox"/> Not Applicable
10. Alternative Methods of Operation: <input type="checkbox"/> Attached, Document ID: _____ <input checked="" type="checkbox"/> Not Applicable
11. Alternative Modes of Operation (Emissions Trading): <input type="checkbox"/> Attached, Document ID: _____ <input checked="" type="checkbox"/> Not Applicable
12. Identification of Additional Applicable Requirements: <input type="checkbox"/> Attached, Document ID: _____ <input checked="" type="checkbox"/> Not Applicable
13. Risk Management Plan Verification: <input type="checkbox"/> Plan previously submitted to Chemical Emergency Preparedness and Prevention Office (CEPPO). Verification of submittal attached (Document ID: _____) or previously submitted to DEP (Date and DEP Office: _____) <input type="checkbox"/> Plan to be submitted to CEPPO (Date required: _____) <input checked="" type="checkbox"/> Not Applicable
14. Compliance Report and Plan: <input type="checkbox"/> Attached, Document ID: _____ <input checked="" type="checkbox"/> Not Applicable
15. Compliance Certification (Hard-copy Required): <input type="checkbox"/> Attached, Document ID: _____ <input checked="" type="checkbox"/> Not Applicable

III. EMISSIONS UNIT INFORMATION

LM6000-PC-ESPRINT

A separate Emissions Unit Information Section (including subsections A through J as required) must be completed for each emissions unit addressed in this Application for Air Permit. If submitting the application form in hard copy, indicate, in the space provided at the top of each page, the number of this Emissions Unit Information Section and the total number of Emissions Unit Information Sections submitted as part of this application.

**A. GENERAL EMISSIONS UNIT INFORMATION
(All Emissions Units)**

Emissions Unit Description and Status

1. Type of Emissions Unit Addressed in This Section: (Check one)			
<input checked="" type="checkbox"/> This Emissions Unit Information Section addresses, as a single emissions unit, a single process or production unit, or activity, which produces one or more air pollutants and which has at least one definable emission point (stack or vent).			
<input type="checkbox"/> This Emissions Unit Information Section addresses, as a single emissions unit, a group of process or production units and activities which has at least one definable emission point (stack or vent) but may also produce fugitive emissions.			
<input type="checkbox"/> This Emissions Unit Information Section addresses, as a single emissions unit, one or more process or production units and activities which produce fugitive emissions only.			
2. Regulated or Unregulated Emissions Unit? (Check one)			
<input checked="" type="checkbox"/> The emissions unit addressed in this Emissions Unit Information Section is a regulated emissions unit.			
<input type="checkbox"/> The emissions unit addressed in this Emissions Unit Information Section is an unregulated emissions unit.			
2. Description of Emissions Unit Addressed in This Section (limit to 60 characters): Combustion Turbine (LM6000-PC-ESPRINT)			
4. Emissions Unit Identification Number: ID:			<input checked="" type="checkbox"/> No ID <input type="checkbox"/> ID Unknown
5. Emissions Unit Status Code: A	6. Initial Startup Date: June 2, 2001	7. Emissions Unit Major Group SIC Code: 49	8. Acid Rain Unit? <input checked="" type="checkbox"/>
9. Emissions Unit Comment: (Limit to 500 Characters) The new CT has replaced the previous CT, which exhausted through a heat recovery steam generator (HRSG) and a single stack. There are no other changes to the process configuration.			

Emissions Unit Control Equipment

1. Control Equipment/Method Description (Limit to 200 characters per device or method):

Steam injection.

2. Control Device or Method Code(s): 28

Emissions Unit Details

1. Package Unit:

Manufacturer: General Electric

Model Number: LM6000-PC-ESPRINT

2. Generator Nameplate Rating: 50 MW @ 59°F 98% RH inlet conditions

3. Incinerator Information:

Dwell Temperature:

°F

Dwell Time:

seconds

Incinerator Afterburner Temperature:

°F

**B. EMISSIONS UNIT CAPACITY INFORMATION
(Regulated Emissions Units Only)**

Emissions Unit Operating Capacity and Schedule

1. Maximum Heat Input Rate:	408 mmBtu/hr LHV @ 59°F inlet	
2. Maximum Incineration Rate:	lb/hr	tons/day
3. Maximum Process or Throughput Rate:		
4. Maximum Production Rate:	50 MW @ 59°F inlet temp	
5. Requested Maximum Operating Schedule:		
	24 hours/day	7 days/week
	52 weeks/year	8,760 hours/year*
6. Operating Capacity/Schedule Comment (limit to 200 characters):		
	<p>* The operating capacity (ie fuel consumption, hours of operation, and heat input) is dependent on the unit's annual NOx emissions, to avoid PSD review the unit must not emit NOx greater than 141 tons per year.</p> <p>Maximum operating capacity, specific to the worst case scenario of CO emissions, is requested as 8541 hours of operation on natural gas (127.5 tpy) and 219 hours of operation on No. 2 fuel oil (7.7 tpy), for a total of 135.2 tpy. Alternatively the unit may operate up to 8760 hours on natural gas representing total CO emissions of 131 tpy.</p>	

**C. EMISSIONS UNIT REGULATIONS
(Regulated Emissions Units Only)**

List of Applicable Regulations

40 CFR 60, Subpart A (General Provisions for New Source Performance Standards)	
40 CFR 60.332(a)(1)-NO_x standards for Stationary Gas Turbines	
40 CFR 60.333-SO₂ standards for Stationary Gas Turbines	
40 CFR 60.334-Monitoring Provisions for Stationary Gas Turbines	
40 CFR Part 70-Operating Permit Program	
40 CFR Part 72 – Acid Rain Program Requirements	
40 CFR Part 73 – Acid Rain Program SO₂ Allowances System	
40 CFR Part 75 – Acid Rain Program Continuous Emissions Monitoring	
Rule 62-296.320(4)(b)1 – Visible emissions	
40 CFR 52.21 – Prevention of Significant Deterioration	
Rule 62-210-200 –Definitions	
Rule 62-210.900(1)(a) –Forms and Instructions	
Rule 62-212.400 – Prevention of Significant Deterioration	
Rule 62-213.400(3) –Permit and Permit Revisions Required	
Rule 62-213.413 –Fast-Track Revisions of Acid Rain Parts	
Rule 62-213.440(1) (c) –Permit Content	
Rule 62-214.320 –Application	
Rule 62-214.370(4) –Revisions and Administrative Corrections	
Rule 62-214.420(11) –Permit Applications	

**D. EMISSION POINT (STACK/VENT) INFORMATION
(Regulated Emissions Units Only)**

Emission Point Description and Type

1. Identification of Point on Plot Plan or Flow Diagram? EU-1		2. Emission Point Type Code: 2	
3. Descriptions of Emission Points Comprising this Emissions Unit for VE Tracking (limit to 100 characters per point): Single stack for CT and DB			
4. ID Numbers or Descriptions of Emission Units with this Emission Point in Common: EU-1 Combustion Turbine (LM6000-PC-ESPRINT) EU-2 Duct Burners			
5. Discharge Type Code: V	6. Stack Height: 93 feet	7. Exit Diameter: 9.8 feet	
8. Exit Temperature: 257 °F	9. Actual Volumetric Flow Rate: 607,360 acfm	10. Water Vapor: 10-12 vol%	
11. Maximum Dry Standard Flow Rate: 216,956 dscfm		12. Nonstack Emission Point Height: feet	
13. Emission Point UTM Coordinates: Zone: 17 East (km): 369.4 North (km): 3,279.3			
14. Emission Point Comment (limit to 200 characters): Items 8, 9, 10, 11 based on the CT only, at 59°F and 60% Relative Humidity at the inlet.			

**E. SEGMENT (PROCESS/FUEL) INFORMATION
(All Emissions Units)**

Segment Description and Rate: Segment 1 of 2

1. Segment Description (Process/Fuel Type) (limit to 500 characters): Natural Gas Firing		
2. Source Classification Code (SCC): 2-01-002-01		3. SCC Units: Million Cubic Feet Burned
4. Maximum Hourly Rate: 0.429 (LHV)	5. Maximum Annual Rate: 3758 (LHV)	6. Estimated Annual Activity Factor:
7. Maximum % Sulfur: 1 grain/ 100 CF	8. Maximum % Ash:	9. Million Btu per SCC Unit: 950 (LHV)
10. Segment Comment (limit to 200 characters): Based on inlet conditions 59°F and 60% relative humidity, LHV.		

Segment Description and Rate: Segment 2 of 2

1. Segment Description (Process/Fuel Type) (limit to 500 characters): Distillate oil firing in CT		
3. Source Classification Code (SCC): 2-01-002-01		3. SCC Units: Thousand Gallons Burned
4. Maximum Hourly Rate: 2.9	5. Maximum Annual Rate: 635	6. Estimated Annual Activity Factor:
7. Maximum % Sulfur: 0.5	8. Maximum % Ash: 0.1	9. Million Btu per SCC Unit: 132
10. Segment Comment (limit to 200 characters): Million Btu per SCC Unit = 132.48 (rounded to 132). Heat content based on LHV.		

Attachment A
Example Calculations

Example Carbon Monoxide Equations Natural Gas Operation

Givens and Constants:

Flow: 216,956 dscfm 13,017,360 dscfh

Worst Case Scenario CO Emissions Operating on Natural Gas: 127.5 tpy @ 8541 hours

Worst Case Scenario CO Emissions Operating on No. 2 Fuel Oil: 7.7 tpy @ 219 hours

Molecular Weight of CO: 28.01 lb/lb-mol

Constant: 385.15 scf/lb-mol

CO lbs/hr, Natural Gas:

$$127.5 \text{ tpy} = (8541 \text{ hr} * \text{CO lbs/hr})/2000$$

$$255000 \text{ lbspy} = 8541 \text{ hr} * \text{CO lbs/hr}$$

$$\text{CO lbs/hr} = 29.9 \text{ lbs/hr}$$

CO ppmvd, Natural Gas:

$$\text{CO ppmvd} = (385.15 * 1,000,000 * 29.9)/(13,017,360 * 28.01)$$

$$\text{CO ppmvd} = 11,515,985,000/364,616,253$$

$$\text{CO ppmvd} = 31.6 \text{ ppm}$$